

VITERBO UNIVERSITY

Graduate Syllabus

Semester: Winter 2011

Course Title: **Ready, Set, Science
~ Rethinking K-2 Science Education**

Instructor: Karen J. Nesbit, M.Ed; NBCT

Credits: One Graduate Credit

Location: Pleasant View Elementary – Rm 224, LMC, Computer Lab

Dates:	Thursday, January 6	4:30 PM – 7:30 PM
	Thursday, January 20	" "
	Thursday, February 3	" "
	Thursday, February 17	" "

I. Course Description:

This course is designed to explore and practice the skills necessary to fulfill the role of science teacher for K-2 students using FOSS.

What does research tell us about effective science instruction?

What types of instructional experiences help K-2 students learn science with understanding? What do teachers, need to know in order to create and support such experiences?

We will utilize collaborative technology in order to share ideas and help build a resource bank for K-2 teachers.

II. Conceptual Framework

This course is designed around the FOSS (Full Option Science System) in order to guarantee fidelity of curriculum delivery.

Creating a constructivist classroom is central to this framework. The role social construction of knowledge plays in teaching and learning is primary to scientific inquiry. This requires a shift from a teacher-centered to a child-centered, collaborative classroom. Providing teachers with collaborative opportunities to learn both the theory and create a 'strategy bank' in order to accomplish this paradigm shift is a primary responsibility of this course.

III. Course Objectives:

1. The teacher will develop their practical classroom management skills to implement and sustain inquiry based Science instruction using FOSS science units.
2. The teacher will demonstrate knowledge of Inquiry Science learning principles and the implications that social construction of knowledge has in their classroom.
3. The teacher will identify the prerequisites necessary for successful implementation of Science as Inquiry in the classroom.
4. The teacher will reflect on their practice and actively seek out opportunities to grow professionally.

REQUIRED TEXT:

Michaels, S., Schouse, A., Schweingruber, H. (2008)
Ready, Set, Science, Putting Research to Work in K-8 Science Classrooms

Ready...Set...Science! (Thu, 8 Nov 2007 15:51:21 -0500)

[Ready...Set...Science](#) (Podcast)

Executive Summary Science Audit March (2010) Curriculum and Instructional
Improvement Process – Franklin Public Schools

IV. Suggested Reading:

Zemelman, S., Daniels, H., & Hyde, A. (2005). *Best practice: Today's standards for teaching and learning in America's schools* (3rd Ed.). Portsmouth, NH: Heinemann.

Tweed, A. (2009) *Designing Effective Science Instruction, What Works in Science Classrooms*

[Learning Science in Informal Environments](#) (Podcast) (Fri, 23 Oct 2009 15:33:24 -0400)

[Taking Science to School: Learning and Teaching Science in Grades K-8](#) (2007)

VI. Course Requirements:

- ∞ **Science Journal and Reflection based on Text:** **25% of Grade**
(Due class 2-4) Teacher candidates will post a reflective journal prompt to the course wiki (under discussion) each class based on the following prompts:
 - Due class 2:
 1. After reading Chapter 1 of *Ready, Set Science* describe your understanding of what “inquiry” means in science.
 2. How does this compare with your experiences of Science classes as a student?
 - Due class 3:
 1. What practical benefits and potential issues do you see in using inquiry to teach Science?
 2. What have you learned that you hope to use in your classroom?
 - Due class 4:
 1. What new questions or issues have arisen for you?
 2. What resources can you use to address these questions or issues?
- ∞ **Lesson Analysis:** **25% of Grade**
(Due Class 3) Teachers will choose a FOSS lesson and write an analysis of how it could better utilize constructivist techniques (if applicable), and how they would manage the materials and students during the lesson.
Product: written analysis (25%)
- ∞ **Resource Contribution:** **25% of Grade**
(Due class 2, 3 & 4) Teachers will contribute resources pertaining to grade level FOSS units. Teachers are encouraged to look for technological (e.g. video, on-line pictures, smart board lessons and community resources. These resources will be presented in class and shared in the District **STAFF Shares** folder on Franklin Public School *network*.

1. Complete all readings and other assigned materials.
2. Actively participate in class/Attendance.
3. Post reflections on discussion board
4. Contribute one on-line resource per each grade level Foss unit (3) shared in District network **STAFF Shares** folder.

VII. Evaluation:

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| 1. Class Participation/Attendance | 25 points |
| 2. Reflective-discussion posts | 25 points |
| 3. Digital Resource contribution | 25 points |
| 4. Lesson analysis and class reflection | 25 points |

Course Grades

90 -100 points = A

80 - 89 points = B

70 - 79 points = C

69 and below = Incomplete

Class	Topics	Assessments Due
1	<ul style="list-style-type: none"> ∞ Introductions to course, instructor ∞ What is science? - YOU tube intro http://www.youtube.com/watch?v=1JJ4boY22go ∞ WIKI – course introduction ∞ Read Franklin Science Review Report - Jigsaw ∞ Collaborative work – wikis, FOSS training video, Discovery Streaming clips, smartboard lessons ∞ Q & A 	
2	<ul style="list-style-type: none"> ∞ Evidence Bucket – (mini-lesson) ∞ Collaborative work – wikis, FOSS training video clips ∞ Digital demonstration – teacher presentations ∞ Share lesson analysis – Grade level small groups ∞ Q & A 	<ol style="list-style-type: none"> 1. Post reflection on wiki discussion board. 2. Share Lesson Analysis 3. Share digital resource
3	<ul style="list-style-type: none"> ∞ Technology & Science – FOSS website (mini-lesson) ∞ Collaborative work – wikis, FOSS training video clips ∞ Digital demonstration – teacher presentations ∞ Share lesson analysis – Grade level small groups ∞ Q & A 	<ol style="list-style-type: none"> 1. Post reflection on wiki discussion board. 2. Share Lesson Analysis 3. Share digital resource
4	<ul style="list-style-type: none"> ∞ CUE – Content, Understanding, Environment ∞ Model and explore – mini lesson ∞ Wiki demonstration – teachers presentations ∞ Share lesson analysis – Grade level small groups ∞ Q & A <p>Course Reflection/Evaluation</p>	<ol style="list-style-type: none"> 1. Post reflection on wiki discussion board. 2. Share Lesson Analysis 3. Share digital resource 3. Course Reflection/Evaluation <p>DUE: March 3, 2011</p>

Americans with Disabilities Act:

If you are a student with a disability and require auxiliary aids, services or other accommodations for this class, please see the instructor to discuss your accommodation needs.